REMARKS/ARGUMENTS

Several amendments have been made to the claims. Claims 1 and 11 have been amended to define the composition and element as "infrared radiation-sensitive" as described in [0017], [0018], and[0066] of the specification. In addition, these claims have been amended to define the infrared absorber as having a maximum absorption wavelength in a range of from 760 to 1200 nm as described in [0020], and to include an aqueous alkali-soluble binder resin as described in original Claim 9. Further, Claims 1 and 11 have been amended to indicate that the combination of infrared absorber and organic boron compound generate a free radical upon exposure to infrared radiation as described in [0037] and [0068] of the present application.

Claims 8, 9, and 18 have been cancelled.

Claim 11 has also been amended to identify the printing plate precursor as "lithographic" as described in [0018].

Claims 12-17 have been amended to be consistent with amended Claim 11.

Claim 19 has been amended to be consistent with amended Claim 11 and to define the developing solution as an aqueous alkali solution as described in [0089].

New Claim 20 defines amounts of certain components and the onium salt as an iodonium salt as described in [0033], [0034], [0039], [0043], [0047], [0050], and [0056].

New Claim 21 defines certain binder resin alkali soluble groups as described in [0052].

Rejection Under 35 U.S.C. §102(b)

Claims 1, 3, 7, 8, 10, 11, 13, 17, 18, and 19 have been rejected as being anticipated by U.S. 2002/0177074 (Hoshi et al.). This rejection is respectfully traversed. Hoshi et al. does not describe the use of a binder resin that is aqueous alkali solution soluble because the elements (and binders) of that reference are designed for on-press development and thus must be water-soluble [0081]. Thus, the presently claimed invention is novel over the teaching in Hoshi et al. and the Section 102(b) should be withdrawn.

Rejection Under 35 U.S.C. §103(a)

Claims 1-19 have been rejected as unpatentable over WO 2004/114019 (or US 2006/0251987, Sakurai et al.) in view of US 2005/0020710 (Ishihara et al.). The rejection is respectfully traversed.

The Office Action argues (pages 4-7) that Sakurai et al. discloses a negative-working photosensitive composition comprising an infrared absorber [0015], [0019], and [0033] that includes a near infrared absorbing cationic dye represented by formula (I), an organic boron compound that functions as a polymerization initiator when used in combination with the infrared absorber [0016] and [0020] in which the organic boron is an ammonium salt of a quaternary boron anion, a compound that has polymerizable unsaturated groups [0017], [0043], and [0044], and an alkali-soluble binder resin that comprises a copolymer with an aromatic hydroxyl group [0022], [0051], and [0052]. The Office Action then argues that this composition can be applied to a support to form a negative-working photosensitive lithographic printing plate. The Office Action admits that Sakurai et al. fails to teach the use of an onium salt in the negative-working photosensitive composition.

Ishihara et al. is applied in the Office Action for its disclosure of hybrid type onium salts including an iodonium salt [0093] and [0094] with various cations, which iodonium salts are useful as photopolymerization initiators and acid generators for a chemically amplified resist [0267]. The onium salts are considered to provide improved acid generation efficiency by irradiation to form a polymer is high hardness and resists with high sensitivity.

The Office Action then concludes its arguments by opining that it would be obvious to one of ordinary skill in the art at the time the invention was made to use the hybrid type onium salts of Ishihara et al. in the negative-working photosensitive composition of Sakurai et al. to improve acid generation efficiency by irradiation and to increase the hardness and sensitivity of a resist composition.

With respect to Claim 19, it is argued that Sakurai et al. also discloses a method of forming a lithographic printing plate using laser irradiation [008] and by developing the non-imaged areas [0087].

Applicants Rebuttal:

Sakurai et al. describes a negative-working photosensitive composition for lithography that includes an IR absorber, organoboron compound, polymerizable compound, diazo resin, and alkali-soluble resin. As admitted by the Office Action, it fails to describe or teach the use of onium salts in such composition. Rather, the only taught or suggested photopolymerization initiators are triazines [0042] and even they are optional.

In the presently claimed invention, the presence of the onium salt provides desired imaging sensitivity and durability of the resulting image. As pointed on page 24 [0068] of the present application, the onium salt appears to accelerate the radical polymerization initiated by the infrared irradiation and infrared absorber. Also, the storage stability is improved.

Curing of the exposed regions in the infrared radiation-sensitive printing plate precursor of this invention is achieved by free radical generation from the combination of infrared absorber, organic boron compound, and the onium salt. The free radicals then cause polymerization of the compound having a polymerizable unsaturated group. It is clear from the specification of the present application that "free radical" polymerization is achieved, not acid-catalyzed polymerization. It is the presence of free radicals that achieves the curing, but then their action also can be inhibited by the presence of oxygen [0069], and that is one of the problems that the present invention solves.

These improvements are not achieved by mere use of the organic boron compound or the onium salt alone. Rather, the combination of compounds is important to achieve these results as demonstrated in Applicants' examples beginning on page 36 of the present application. The useful data are provided in Table 1 on page 43. Comparative Example 1 shows the use of a composition that contained an infrared absorber and organic boron compound, but no onium salt. Comparative Example 2 shows the use of a similar composition that contained an onium salt but the organic boron compound was replaced with a triazine polymerization initiator (Chemical formula 24 on page 46). Invention Example 1 would be the directed comparison for these two Comparative Examples. The results after the same imaging and developing conditions are shown in Table 2 (page 47) in which no images were obtained for Comparative Examples 1 and 2 and thus sensitivity, storage stability, and print durability could not be evaluated.

The question of whether the teaching in Ishihara et al. would be combined with that in Sakurai et al. is now addressed. The unpatentability rejection is clearly based on an opinion in the Office Action that a skilled worker in the art at the time the invention was made would have substituted the onium salts of Ishihara et al. for the triazines in the negative-working composition of Sakurai et al. Applicants respectfully disagree with this opinion.

First of all, no technical or common sense reasons or explicit analysis is provided either in the cited references themselves, or in the Office Action, to support the opinion given therein. Such reasoning or analysis is required as recently stated by the Supreme Court in *KSR International v. Teleflex Inc.*, 82 USPQ2d 1385, 2007. Rejections cannot be sustained by mere conclusions and that is what is given on page 7, first full paragraph, of the Office Action, which previously merely outlines what each reference is believed to teach, and then *voila*, the conclusion is that they would be used together. Only Applicants' application could give one skilled in the art, or the Examiner, such an idea because, as pointed out above, Applicants' comparative showings show the considerable advantages of using the organic boron compound and onium salt together.

One might speculate that a person of ordinary skill in the art having "common sense" at the time the invention was made, would have reasonably looked to the teaching in Ishihara et al. to improve upon the technology in Sakurai et al. Applicants respectfully disagree. Sakurai et al. is clearly directed to negative-working, free radical polymerizable compositions used for making lithographic printing plates. The imaging chemistry clearly requires the generation and use of free radical for polymerization.

Ishihara et al. is directed to classes of onium salts that are useful as cationic or acid-based polymerization of compositions designed for chemically amplified photoresists (abstract). The only reference to lithography [0006] is in the context of mentioning that the irradiation sources in a number of industries have been from shorter wavelengths, and thus, chemically amplified resist compositions have also been irradiated with such imaging sources. This is not suggestive that the compositions used for photoresists can be reasonably expected to work the same way in lithographic printing plate precursors.

Moreover, the chemically based compositions of Ishihara et al. clearly are not free radical based imaging chemistries. The described onium salts are intended to generate an acid that then is used for polymerization [0130]-[0131] as a result of irradiation. This irradiation is not carried out using infrared radiation, as required by the present invention or by Sakurai et al. Rather, irradiation is carried out using UV, deep V, KrF excimer laser, ArF excimer laser, fluorine excimer laser, electron beam or X-rays [0189]-[0190]. It is also noted that the onium salts taught by Ishihara et al. are used alone or with other acid generating compounds [0182]. They are not used with organic boron compounds, triazines, or any other free radical-generating compound.

Thus, there is no technical reason for a skilled artisan to consult Ishihara et al. for solving the problems as Applicants have done. There is no technical reason a skilled artisan would combine the teachings of Ishihara et al. and Sakurai et al. It would be counter-intuitive to do so. The imaging chemistries are very different and require very difference combinations of chemicals. While both require polymerization of polymerizable compounds, the effects of polymerization in a given industrial application are not always the same. There is no suggestion in Ishihara et al. that combining onium salts with organic boron compounds and infrared absorbers would provide an imaging chemistry that is highly sensitive to IR irradiation, and provide lithographic images with high durability and storage stability especially since Ishihara et al. teaches only acid-producing onium salts for use in photoresists, not free radical generating chemistries for lithographic printing plates. Only Applicants' teaching provides any reasons for doing this and that source of information is not proper for supporting an unpatentability rejection.

Thus, because there is no technical or common sense reason for combining the teaching of Ishihara et al. with Sakurai et al., the basis for the unpatentability rejection is flawed. Because the Office Action merely gives an opinion of combinability and teaching of the presently claimed invention, without such reasoning or analysis, there is clearly no basis for the unpatentability rejection. The only basis for combining the cited art or reasons for doing so are solely within Applicant's original disclosure. Thus, for all of these reasons, it is believed that this rejection should be withdrawn.

In view of the foregoing amendments and remarks, reconsideration of this patent application is respectfully requested. A prompt and favorable action by the examiner is earnestly solicited.

Respectfully submitted,

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